



Tennessee Valley Authority, Post Office Box 2000, Decatur, Alabama 35609-2000

October 7, 2004

10 CFR 50.54 (f)

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Stop: OWFN P1-35
Washington, D.C. 20555-0001

Gentlemen:

In the Matter of) Docket No. 50-259
Tennessee Valley Authority)

BROWNS FERRY NUCLEAR PLANT (BFN) UNIT 1 - RESPONSE TO NRC
GENERIC LETTER (GL) 87-02, SUPPLEMENT 1 THAT TRANSMITS
SUPPLEMENTAL SAFETY EVALUATION REPORT NO. 2 (SSER No. 2) ON
SQUG GENERIC IMPLEMENTATION PROCEDURE, REVISION 2, AS
CORRECTED ON FEBRUARY 14, 1992 (GIP-2)

This letter provides TVA's response to NRC Generic Letter (GL) 87-02, Supplement 1 (S1) for Browns Ferry Nuclear Plant (BFN) Unit 1. Subject to a final operations review, TVA has completed its seismic verification of BFN Unit 1 in accordance GL 87-02. The BFN seismic verification was performed in accordance with the Seismic Qualification Utility Group (SQUG) Generic Implementation Procedure for Seismic Verification of Nuclear Power Plant Equipment, Revision 2A (GIP-2A) (Reference 1).

GL 87-02 S1, issued May 22, 1992 (Reference 2), transmitted the NRC's Supplemental Safety Evaluation (SSER) No. 2 on the Seismic Qualification Utility Group's (SQUG's) Generic Implementation Procedure for Seismic Verification of Nuclear Power Plant Equipment, Revision 2 (GIP-2). SSER No. 2 approved, with certain conditions and exceptions, use of GIP-2 as an acceptable methodology for resolution of NRC Unresolved Safety Issue A-46 (USI A-46), "Seismic Qualification of Equipment in Operating Plants." GIP-2 described SQUG's methodology for performing a plant-specific

AO25

U.S. Nuclear Regulatory Commission
Page 2
October 7, 2004

seismic evaluation for resolution of USI A-46 for affected licensees. GIP-2A consists of GIP-2 revised to incorporate the NRC Staff's clarifications, interpretations, exceptions, and positions identified in SSER No. 2.

TVA used this methodology previously for resolution of USI A-46 for BFN Units 2 and 3. Enclosure 1 provides a background and description of resolution of USI A-46 for Browns Ferry Units 2 and 3. The methodology employed for evaluation and resolution of USI A-46 for BFN Unit 1 is consistent with the methodology used to resolve the issue for BFN Units 2 and 3. The NRC closed USI A-46 for BFN Units 2 and 3 in an NRC letter and accompanying safety evaluation dated March 21, 2000 (Reference 3).

TVA has completed its seismic verification of BFN Unit 1 subject to a final BFN Unit 1 Operations Department review of the seismic Safe Shutdown Equipment List (SSEL) against BFN Unit 1 operations procedures. The Operations review cannot be completed until the BFN Unit 1 procedures have been revised and approved following implementation and closeout of the design changes in progress as part of BFN Unit 1 restart efforts. TVA will complete the Operations review of the BFN Unit 1 USI A-46 verification following approval of BFN Unit 1 Operations procedures, and notify the NRC of the results of that review prior to BFN Unit 1 restart.

Enclosure 1 provides an introduction, background, and summary of the USI A-46 evaluation performed for BFN Unit 1, and identifies remaining activities.

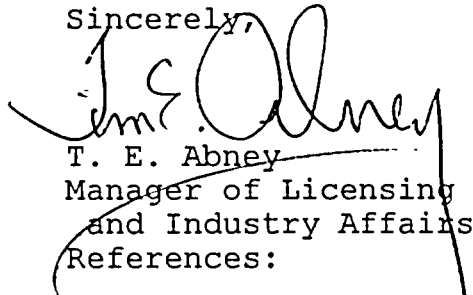
Enclosures 2 and 3 provide a description of the BFN Unit 1 seismic evaluation and relay evaluation performed, the results of those evaluations, and the planned resolution of outliers identified. TVA will resolve all identified outliers prior to the restart of BFN Unit 1.

U.S. Nuclear Regulatory Commission
Page 3
October 7, 2004

There are two new regulatory commitments associated with this submittal. Enclosure 4 contains those commitments. If you have any questions about this submittal, please contact me at (256) 729-2636.

I declare under penalty of perjury that the foregoing is true and correct. Executed on October 7, 2004.

Sincerely,



T. E. Abney
Manager of Licensing
and Industry Affairs

References:

1. "Generic Implementation Procedure (GIP) for Seismic Verification of Nuclear Plant Equipment," Seismic Qualification Utility Group (SQUG), Revision 2A, dated March, 1993.
2. NRC Generic Letter 87-02, Supplement 1, "Supplement No. 1 to Generic Letter (GL) 87-02 That Transmits Supplemental Safety Evaluation Report No. 2 (SSER No. 2) on SQUG Generic Implementation Procedure, Revision 2, as Corrected February 14, 1992 (GIP-2)," dated May 22, 1992.
3. NRC Letter, W. O. Long to J. A. Scalice, "Browns Ferry, Units 1, 2 And 3 Re: Completion of Licensing Action for Generic Letter 87-02 (TAC NOS. M69430, M69431 and M69432)," dated March 21, 2000.

U.S. Nuclear Regulatory Commission
Page 4
October 7, 2004

Enclosures:

cc (w/o enclosures):

U.S. Nuclear Regulatory Commission
Region II
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW, Suite 23T85
Atlanta, Georgia 30303-3415

Mr. Stephen J. Cahill, Branch Chief
U.S. Nuclear Regulatory Commission
Region II
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW, Suite 23T85
Atlanta, Georgia 30303-8931

NRC Senior Resident Inspector
Browns Ferry Nuclear Plant
10833 Shaw Road
Athens, AL 35611-6970

Kahtan N. Jabbour, Senior Project Manager
U.S. Nuclear Regulatory Commission
(MS 08G9)
One White Flint, North
11555 Rockville Pike
Rockville, Maryland 20852-2739

ENCLOSURE 1

TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT (BFN) UNIT 1

RESPONSE TO NRC GENERIC LETTER 87-02, SUPPLEMENT 1
TRANSMITTAL OF
SUPPLEMENTAL SAFETY EVALUATION REPORT NO. 2 (SSER No. 2)
ON SQUG GENERIC IMPLEMENTATION PROCEDURE, REVISION 2
AS CORRECTED ON FEBRUARY 14, 1992 (GIP-2)

I. INTRODUCTION

TVA's approach taken for resolution of USI A-46 for BFN Unit 1 is consistent with the approach taken for resolution of this issue with BFN Units 2 and 3. This enclosure provides a brief background of prior communications between TVA and the NRC concerning resolution of USI A-46 for Browns Ferry Nuclear Plant (BFN), and identifies the activities remaining.

II. BACKGROUND

In December 1980, the Nuclear Regulatory Commission (NRC) initiated an unresolved safety issue, USI A-46, "Seismic Qualification of Equipment in Operating Plants," related to seismic adequacy of mechanical and electrical equipment in older nuclear plants. After substantial technical research by both the Seismic Qualification Utility Group (SQUG) and the NRC regarding this issue, the Staff issued on February 19, 1987, Generic Letter (GL) 87-02, "Verification of Seismic Adequacy of Mechanical and Electrical Equipment in Operating Reactors, Unresolved Safety Issue (USI) A-46," (Reference 1). That letter requested that plants not reviewed to the NRC's current seismic criteria perform a verification of the seismic adequacy of their facilities.

The SQUG developed a seismic verification methodology (the Generic Implementation Procedure or "GIP") to provide a consistent means for the industry to perform the seismic verification. By letter dated December 1, 1987 (Reference 2), TVA informed the NRC of its participation in the SQUG effort.

Following subsequent communications, the SQUG transmitted GIP, Revision 2 (GIP-2) to the NRC. On May 22, 1992 (Reference 3), the NRC issued GL 87-02, Supplement 1 (GL 87-02, S1), which transmitted the NRC's Supplemental Safety Evaluation Report (SSER) No. 2 on GIP-2.

Following ensuing correspondence, by letters dated November 19, 1992, (Reference 4), and March 19, 1993 (Reference 5) the NRC issued safety evaluations addressing resolution of several USI A-46 issues for BFN Units 1, 2 and 3. In Reference 4, the NRC:

- Agreed to allow TVA to incorporate the long-term seismic qualification of conduit and supports, cable trays and supports, and seismic interactions (a previous BFN Units 1, 2, and 3 restart issue) into its USI A-46 implementation program; and
- Agreed that retraction of BFN Unit 1 restart commitments regarding interim seismic qualification of cable trays, conduits and their supports, and only implement the resolution to USI A-46 prior to Unit 1 restart was acceptable.

By letter dated June 28, 1996 (Reference 6), TVA submitted the USI A-46 evaluation reports for BFN Units 2 and 3. By letters dated April 11, 1987 (Reference 7) and November 18, 1997 (Reference 8), TVA informed the NRC that it had resolved the outliers for BFN Unit 3 and BFN Unit 2, respectively.

Following several additional communications, by letter dated March 21, 2000 (Reference 9), the NRC issued its final safety evaluation, closed USI A-46 for BFN Units 2 and 3, and indicated that it would re-visit the issue for BFN Unit 1 should TVA decide to restart that unit.

III. DISCUSSION

Subject to one additional action, TVA has completed the seismic adequacy verification of BFN Unit 1 using the Seismic Qualification Utility Group (SQUG) Generic Implementation Procedure (GIP)-2A. SQUG GIP-2A is GIP-2, updated to incorporate the NRC positions identified in its Supplemental Safety Evaluation Report No. 2 (SSER-2) transmitted with issuance of GL 87-02, S1. The remaining action is a BFN Unit 1 Operations Department review of the

verification performed. This review is required to confirm that the BFN Unit 1 safe shutdown path selected for USI A-46 resolution is acceptable and consistent with plant procedures and operator training. TVA will complete the Operations review of the BFN Unit 1 A-46 verification and submit the results of that review to the NRC prior to restart of BFN Unit 1. Since the BFN Unit 1 safe shutdown path selected for BFN Unit 1 is consistent with that selected for BFN Units 2 and 3, no significant revisions to the enclosed evaluation report are expected as a result of that review.

This seismic verification effort was performed consistent with the methodology used for BFN Units 2 and 3, and consistent with the positions and commitments set forth in previous communications and as described in the NRC safety evaluations discussed above.

Enclosure 2 of this submittal provides the BFN Unit 1 USI A-46 Seismic Evaluation Report. Outliers identified during this review and their planned resolutions are identified in Chapter 5 of that report. All USI A-46 outliers will be resolved prior to BFN Unit 1 Restart

Enclosure 3 provides the BFN Unit 1 USI A-46/Seismic IPEEE Relay Evaluation report. Because TVA performed the seismic IPEEE relay review concurrent with the USI A-46 relay review, Enclosure 3 reports the results of the relay evaluations performed under both of those programs. The companion BFN Unit 1 Seismic IPEEE Report will be transmitted in future correspondence. The BFN Unit 1 USI A-46 relay evaluation did not identify any outliers. No further action is required in regards to the relay review portion of USI A-46 for BFN Unit 1.

IV. REFERENCES

1. NRC letter, H. R. Denton to All Holders of Operating Licenses Not Reviewed to Current Licensing Criteria on Seismic Qualification of Equipment, "Verification Of Seismic Adequacy of Mechanical and Electrical Equipment in Operating Reactors, Unresolved Safety Issue (USI) A-46 (Generic Letter 87-02)," dated February 19, 1987.
2. TVA letter, R. Gridley to NRC, "Browns Ferry Nuclear Plant (BFN) - Generic Letter 87-02 and the Schedule for Implementation of Seismic Qualification Utility Group

(SQUG) Generic Implementation Procedures," dated December 1, 1987.

3. NRC Generic Letter 87-02, Supplement 1, "Supplement No. 1 to Generic Letter (GL) 87-02 That Transmits Supplemental Safety Evaluation Report No. 2 (SSER No. 2) on SQUG Generic Implementation Procedure, Revision 2, as Corrected on February 14, 1992 (GIP-2)," dated May 22, 1992.
4. NRC letter, F. J. Hebdon to M. O. Medford (TVA), "Generic Letter 87-02, Supplement 1 Response - Browns Ferry Nuclear Plant (TAC NOS. M69430, M69431, and M69432)" dated November 19, 1992.
5. NRC letter, F. J. Hebdon to M. O. Medford (TVA), "Generic Letter 87-02, Supplement 1 Response - Browns Ferry Nuclear Plant (TAC Nos. M69430, M69431, and M69432)," dated March 19, 1993.
6. TVA letter, P. Salas to NRC, "Browns Ferry Nuclear Plant (BFN) - Units 2 And 3 - Generic Letter (GL) 87-02, Supplement 1, Verification of Seismic Adequacy of Mechanical and Electrical Equipment in Operating Reactors, Unresolved Safety Issue (USI) A-46 And GL 88-20, Supplement 4, Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities - Submittal of Seismic Evaluation Reports (TAC Nos. M69431, M69432, M83596 and M83597)," dated June 28, 1996.
7. TVA letter, T. E. Abney to NRC, "Browns Ferry Nuclear Plant (BFN) - Unit 3 - Generic Letter (GL) 87-02, Supplement 1, Verification of Seismic Adequacy of Mechanical and Electrical Equipment in Operating Reactors, Unresolved Safety Issue (USI) A-46, and GL 88-20, Supplement 4, Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities (Seismic Portion) - Notification of Completion of Outlier Resolution (TAC Nos. M69432, and M83597)," dated April 11, 1997.
8. TVA letter, T. E. Abney to NRC, "Browns Ferry Nuclear Plant (BFN) - Unit 2 - Generic Letter (GL) 87-02, Supplement 1, Verification of Seismic Adequacy of Mechanical and Electrical Equipment in Operating Reactors, Unresolved Safety Issue (USI) A-46, and

GL 88-20, Supplement 4, Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities (Seismic Portion) - Notification of Completion of Outlier Resolution (TAC Nos. M69431, and M83596)," dated November 18, 1997.

9. NRC Letter, W. O. Long to J. A. Scalice, "Browns Ferry, Units 1, 2 And 3 Re: Completion of Licensing Action for Generic Letter 87-02 (TAC NOS. M69430, M69431 and M69432)," dated March 21, 2000.

ENCLOSURE 1

TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT (BFN) UNIT 1

RESPONSE TO NRC GENERIC LETTER 87-02, SUPPLEMENT 1
TRANSMITTAL OF
SUPPLEMENTAL SAFETY EVALUATION REPORT NO. 2 (SSER No. 2)
ON SQUG GENERIC IMPLEMENTATION PROCEDURE, REVISION 2
AS CORRECTED ON FEBRUARY 14, 1992 (GIP-2)

I. INTRODUCTION

TVA's approach taken for resolution of USI A-46 for BFN Unit 1 is consistent with the approach taken for resolution of this issue with BFN Units 2 and 3. This enclosure provides a brief background of prior communications between TVA and the NRC concerning resolution of USI A-46 for Browns Ferry Nuclear Plant (BFN), and identifies the activities remaining.

II. BACKGROUND

In December 1980, the Nuclear Regulatory Commission (NRC) initiated an unresolved safety issue, USI A-46, "Seismic Qualification of Equipment in Operating Plants," related to seismic adequacy of mechanical and electrical equipment in older nuclear plants. After substantial technical research by both the Seismic Qualification Utility Group (SQUG) and the NRC regarding this issue, the Staff issued on February 19, 1987, Generic Letter (GL) 87-02, "Verification of Seismic Adequacy of Mechanical and Electrical Equipment in Operating Reactors, Unresolved Safety Issue (USI) A-46," (Reference 1). That letter requested that plants not reviewed to the NRC's current seismic criteria perform a verification of the seismic adequacy of their facilities.

The SQUG developed a seismic verification methodology (the Generic Implementation Procedure or "GIP") to provide a consistent means for the industry to perform the seismic verification. By letter dated December 1, 1987 (Reference 2), TVA informed the NRC of its participation in the SQUG effort.

Following subsequent communications, the SQUG transmitted GIP, Revision 2 (GIP-2) to the NRC. On May 22, 1992 (Reference 3), the NRC issued GL 87-02, Supplement 1 (GL 87-02, S1), which transmitted the NRC's Supplemental Safety Evaluation Report (SSER) No. 2 on GIP-2.

Following ensuing correspondence, by letters dated November 19, 1992, (Reference 4), and March 19, 1993 (Reference 5) the NRC issued safety evaluations addressing resolution of several USI A-46 issues for BFN Units 1, 2 and 3. In Reference 4, the NRC:

- Agreed to allow TVA to incorporate the long-term seismic qualification of conduit and supports, cable trays and supports, and seismic interactions (a previous BFN Units 1, 2, and 3 restart issue) into its USI A-46 implementation program; and
- Agreed that retraction of BFN Unit 1 restart commitments regarding interim seismic qualification of cable trays, conduits and their supports, and only implement the resolution to USI A-46 prior to Unit 1 restart was acceptable.

By letter dated June 28, 1996 (Reference 6), TVA submitted the USI A-46 evaluation reports for BFN Units 2 and 3. By letters dated April 11, 1987 (Reference 7) and November 18, 1997 (Reference 8), TVA informed the NRC that it had resolved the outliers for BFN Unit 3 and BFN Unit 2, respectively.

Following several additional communications, by letter dated March 21, 2000 (Reference 9), the NRC issued its final safety evaluation, closed USI A-46 for BFN Units 2 and 3, and indicated that it would re-visit the issue for BFN Unit 1 should TVA decide to restart that unit.

III. DISCUSSION

Subject to one additional action, TVA has completed the seismic adequacy verification of BFN Unit 1 using the Seismic Qualification Utility Group (SQUG) Generic Implementation Procedure (GIP)-2A. SQUG GIP-2A is GIP-2, updated to incorporate the NRC positions identified in its Supplemental Safety Evaluation Report No. 2 (SSER-2) transmitted with issuance of GL 87-02, S1. The remaining action is a BFN Unit 1 Operations Department review of the

verification performed. This review is required to confirm that the BFN Unit 1 safe shutdown path selected for USI A-46 resolution is acceptable and consistent with plant procedures and operator training. TVA will complete the Operations review of the BFN Unit 1 A-46 verification and submit the results of that review to the NRC prior to restart of BFN Unit 1. Since the BFN Unit 1 safe shutdown path selected for BFN Unit 1 is consistent with that selected for BFN Units 2 and 3, no significant revisions to the enclosed evaluation report are expected as a result of that review.

This seismic verification effort was performed consistent with the methodology used for BFN Units 2 and 3, and consistent with the positions and commitments set forth in previous communications and as described in the NRC safety evaluations discussed above.

Enclosure 2 of this submittal provides the BFN Unit 1 USI A-46 Seismic Evaluation Report. Outliers identified during this review and their planned resolutions are identified in Chapter 5 of that report. All USI A-46 outliers will be resolved prior to BFN Unit 1 Restart

Enclosure 3 provides the BFN Unit 1 USI A-46/Seismic IPEEE Relay Evaluation report. Because TVA performed the seismic IPEEE relay review concurrent with the USI A-46 relay review, Enclosure 3 reports the results of the relay evaluations performed under both of those programs. The companion BFN Unit 1 Seismic IPEEE Report will be transmitted in future correspondence. The BFN Unit 1 USI A-46 relay evaluation did not identify any outliers. No further action is required in regards to the relay review portion of USI A-46 for BFN Unit 1.

IV. REFERENCES

1. NRC letter, H. R. Denton to All Holders of Operating Licenses Not Reviewed to Current Licensing Criteria on Seismic Qualification of Equipment, "Verification Of Seismic Adequacy of Mechanical and Electrical Equipment in Operating Reactors, Unresolved Safety Issue (USI) A-46 (Generic Letter 87-02)," dated February 19, 1987.
2. TVA letter, R. Gridley to NRC, "Browns Ferry Nuclear Plant (BFN) - Generic Letter 87-02 and the Schedule for Implementation of Seismic Qualification Utility Group

(SQUG) Generic Implementation Procedures," dated December 1, 1987.

3. NRC Generic Letter 87-02, Supplement 1, "Supplement No. 1 to Generic Letter (GL) 87-02 That Transmits Supplemental Safety Evaluation Report No. 2 (SSER No. 2) on SQUG Generic Implementation Procedure, Revision 2, as Corrected on February 14, 1992 (GIP-2)," dated May 22, 1992.
4. NRC letter, F. J. Hebdon to M. O. Medford (TVA), "Generic Letter 87-02, Supplement 1 Response - Browns Ferry Nuclear Plant (TAC NOS. M69430, M69431, and M69432)" dated November 19, 1992.
5. NRC letter, F. J. Hebdon to M. O. Medford (TVA), "Generic Letter 87-02, Supplement 1 Response - Browns Ferry Nuclear Plant (TAC Nos. M69430, M69431, and M69432)," dated March 19, 1993.
6. TVA letter, P. Salas to NRC, "Browns Ferry Nuclear Plant (BFN) - Units 2 And 3 - Generic Letter (GL) 87-02, Supplement 1, Verification of Seismic Adequacy of Mechanical and Electrical Equipment in Operating Reactors, Unresolved Safety Issue (USI) A-46 And GL 88-20, Supplement 4, Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities - Submittal of Seismic Evaluation Reports (TAC Nos. M69431, M69432, M83596 and M83597)," dated June 28, 1996.
7. TVA letter, T. E. Abney to NRC, "Browns Ferry Nuclear Plant (BFN) - Unit 3 - Generic Letter (GL) 87-02, Supplement 1, Verification of Seismic Adequacy of Mechanical and Electrical Equipment in Operating Reactors, Unresolved Safety Issue (USI) A-46, and GL 88-20, Supplement 4, Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities (Seismic Portion) - Notification of Completion of Outlier Resolution (TAC Nos. M69432, and M83597)," dated April 11, 1997.
8. TVA letter, T. E. Abney to NRC, "Browns Ferry Nuclear Plant (BFN) - Unit 2 - Generic Letter (GL) 87-02, Supplement 1, Verification of Seismic Adequacy of Mechanical and Electrical Equipment in Operating Reactors, Unresolved Safety Issue (USI) A-46, and

GL 88-20, Supplement 4, Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities (Seismic Portion) - Notification of Completion of Outlier Resolution (TAC Nos. M69431, and M83596)," dated November 18, 1997.

9. NRC Letter, W. O. Long to J. A. Scalice, "Browns Ferry, Units 1, 2 And 3 Re: Completion of Licensing Action for Generic Letter 87-02 (TAC NOS. M69430, M69431 and M69432)," dated March 21, 2000.

ENCLOSURE 2

TENNESSEE VALLEY AUTHORITY
BROWNS FERRY NUCLEAR PLANT (BFN) UNIT 1

RESPONSE TO NRC GENERIC LETTER 87-02, SUPPLEMENT 1
TRANSMITTAL OF
SUPPLEMENTAL SAFETY EVALUATION REPORT NO. 2 (SSER No. 2)
ON SQUG GENERIC IMPLEMENTATION PROCEDURE, REVISION 2
AS CORRECTED ON FEBRUARY 14, 1992 (GIP-2)

BFN UNIT 1 USI A-46 SEISMIC EVALUATION REPORT

(See attached)